

CLAIMS

1. A method of depleting a high-abundance molecule from a biological sample, comprising the steps of
 - a) subjecting the sample to affinity depletion using an affinity support with high affinity for a high abundance molecule, and/or
 - b) immunodepletion using an affinity support coupled to an antibody directed against whole or previously fractionated plasma or serum.
2. A method according to claim 1, in which the sample is subjected to both affinity depletion and immunodepletion.
3. A method according to claim 1 or claim 2, in which step (a) is performed before step (b).
4. A method according to any one of claims 1 to 3, in which the high abundance molecule is a protein.
5. A method according to any one of claims 1 to 4, in which the protein is albumin or immunoglobulin.
6. A method according to any one of claims 1 to 5, in which the antibody is an avian antibody.
7. A method according to any one of claims 1 to 6, in which the biological sample is a biological fluid.
8. A method according to any one of claims 1 to 6, in which the biological sample is conditioned medium from a cell or tissue culture, or is a tissue or cell extract.
9. A method according to any one of claims 1 to 8, in which the affinity support used in step (a) is a dye affinity chromatography resin.
10. A method according to claim 9, in which the dye is a chlorotriazine compound.
11. A method according to claim 10, in which the affinity support is a Cibacron blue F3GA affinity support.
12. A method according to any one of claims 1 to 8, in which the affinity support used in step (a) is a magnetic bead and the magnetic separation is effected by

magnetic means.

13. A method according to claim 12, in which the antibody is an avian antibody.

14. A method according to claim 13, in which the antibody is a chicken antibody.

15. A method according to claim 14, in which the antibody is chicken IgY.

16. A method according to any one of claims 1 to 15, in which the antibody used in step (b) is a first generation polyclonal antibody raised against whole serum or plasma, or against any fraction thereof.

17. A method according to any one of claims 1 to 15, in which the antibody used in step (b) is a second generation polyclonal antibody raised against plasma or serum which has already been subjected to at least one round of affinity depletion and immunodepletion with an affinity support coupled to IgY directed against homologous plasma or serum.

18. A method of separation or analysis of a low abundance molecule in a biological sample, comprising the step of depleting at least one high abundance molecule from the sample by a method according to any one of claims 1 to 17, prior subjecting the sample to one or more separation or analytical steps for the separation or analysis of the low abundance molecule.

19. A method of identifying a change in the pattern of expression of a low abundance molecule in a mammal, comprising the step of depleting at least one high abundance molecule from a biological sample from the mammal by a method according to any one of claims 1 to 17, prior to subjecting the sample one or more analytical steps to detect the expression of the low abundance molecule.

20. A composition for immunodepletion of a high abundance molecule from a biological sample, comprising an antibody preparation directed against a high abundance molecule, coupled to an affinity support.

21. A composition according to claim 20, in which the high abundance molecule is one present in serum or plasma.
22. A composition according to claim 21, in which the high abundance molecule is albumin or immunoglobulin.
23. A composition according to any one of claims 20 to 22, in which the antibody is an avian polyclonal antibody.
24. A composition according to claim 23, in which the antibody is a first or second generation avian polyclonal antibody.
25. A composition according to claims 23 or claim 24, in which the antibody is a chicken antibody.
26. A composition according to claim 25, in which the antibody is chicken IgY.
27. A device for the rapid processing of biological samples, comprising a generally cylindrical chamber having an opening at either end, in which
- a) each opening is adapted to fit sealingly to a receptacle,
 - b) the sample can be transferred from one receptacle to the other via the chamber, and
 - c) the chamber has transversely disposed within it multiple layers of an affinity support having high affinity for a high abundance molecule, separated by a layer of an affinity support coupled to one or more antibodies directed against a high abundance molecule.
28. A device according to claim 27, in which the high abundance molecule is one present in serum or plasma.
29. A device according to claim 28, in which the high abundance molecule is albumin or immunoglobulin.
30. A device according to any one of claims 27 to 29, in which the antibody is an avian polyclonal antibody.
31. A device according to claim 30, in which the antibody is a first or second generation avian polyclonal antibody.
32. A device according to claims 29 or claim 30, in which the antibody is a chicken antibody.

33. A device according to claim 32, in which the antibody is chicken IgY.
34. A device according to any one of claims 27 to 33, in which the receptacles are hypodermic syringes and the chamber is a Luer-type cartridge.
35. A device according to any one of claims 27 to 33, in which the chamber is adapted to couple directly to a separation or analytical apparatus.
36. A kit for removal of a high-abundance molecule from a biological sample, comprising:
- a) a first affinity support with high affinity for a high abundance molecule; and
 - b) a second affinity support coupled to an antibody directed against whole or previously fractionated serum or plasma,
- in which the antibody binds to a high abundance molecule.
36. A kit according to claim 35, in which the high abundance molecule is one present in serum or plasma.
37. A kit according to claim 36, in which the high abundance molecule is albumin or immunoglobulin.
38. A kit according to any one of claims 35 to 37, in which the antibody is an avian polyclonal antibody.
39. A kit according to claim 38, in which the antibody is a first or second generation avian polyclonal antibody.
40. A kit according to claims 38 or claim 39, in which the antibody is a chicken antibody.
41. A kit according to claim 40, in which the antibody is chicken IgY.
42. A kit according to any one of claims 35 to 41, comprising a device according any one of claims 27 to 35.
43. A kit according to any one of claims 35 to 42, comprising a diluent suitable for use with biological fluids.